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NOTES ON INDIAN CHRYSOMELINAE BASED ON THE COLLECTION
OF THE FOREST RESEARCH INSTITUTE, DEHRA DUN
(COLEOPTERA: CHRYSOMELIDAE)

By HARUO TAKIZAWA

Research Trips for Forest and Agricultural Insects in the Subcontinent of India (Hokkaidô University, University of Calcutta, and Zoological Survey of India Joint Project) [Grants-in-Aid for Overseas Scientific Survey, Ministry of Education, Japanese Government, 1978, No. 304108; 1979, No. 404307], Scientific Report No. 7.

Abstract

TAKIZAWA, H. 1980. Notes on Indian Chrysomelinae based on the collection of the Forest Research Institute, Dehra Dun (Coleoptera: Chrysomelidae). *Ins. matsum. n. s.* 21: 49-55, 4 figs.

Based on undetermined collection of the Forest Research Institute, Dehra Dun, a list of 18 Indian Chrysomelinae is given and a new species is described: *Humba cyanicollis*, *Agrosteomela indica indica*, *Crosita mellyi*, *Chrysolina aurata aurata*, *C. modesta*, *C. exanthematica*, *C. inconstans*, *C. madrasae*, *C. vishnu*, *C. brahma* n. sp., *Agasta formosa*, *Chrysomela populi*, *Linnaeidea chlorina*, *Plagioderma miniaticollis*, *P. rufescens*, *Plagioderma* sp., *Phaedon assamensis*, and *Pseudolina indica*. Aedeagus is figured for 15 species and hind wing for 9 species.

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INTRODUCTION

Through the kindness of Dr. P. K. Sen-Sarma, I have had an opportunity to study some undetermined leaf-beetles of the subfamily Chrysomelinae which are preserved in the collection of the Forest Research Institute, Dehra Dun, India. The material is classified into 18 species, of which one is described as new to science.

I wish to thank Dr. P. K. Sen-Sarma of the Forest Research Institute, Dehra Dun for allowing me to study the interesting material and to Dr. S. Kimoto of Kurume University for his useful suggestions. As this work was done in connection with the "Research Trips for Forest and Agricultural Insects in the Subcontinent of India", my particular thanks are due to Prof. D. N. Raychaudhuri of University of Calcutta and to Dr. T. N. Ananthakrishnan, the director of the Zoological Survey of India, Calcutta, for their various help to the project.

ENUMERATION

1. *Humba cyanicollis* (Hope, 1831)

Specimens examined. 1♀, Pash., 25-VI-1921, C. M. Inglis leg.; 6♂♂ 8♀♀, Singla, VI-1921, 2, 11-VII-1925, C. M. Inglis leg.; 1♀, Mungpou, 7-VI-1925, C. M. Inglis leg.; 1♀, Rangit Valley, 19-VIII-1925, C. M. Inglis leg.

Distribution. SW. China, N. Vietnam, NE. India, Burma, Ceylon.

2. *Agrosteomela indica indica* (Hope, 1831)

Specimens examined. 1♀, Deoban (9700 ft.), Chakrata, U. P., 29-VI-1933, B. M. Bhatia leg.; 1♀, Seraj, Punjab, VII-1932, C. A. R. Bedram & I. F. S. Class leg.; 1♀, Pulga (7000 ft.), VII-1941.

Distribution. India, Sikkim, Nepal, Bhutan, Burma.

3. *Crosita mellyi* (Stål, 1857)

Specimens examined. 1♂ 2♀♀, New Forest, Dehra Dun, 10-IV-1939, 6-V-1939 (on *Dahlbergia sissoo*), XI-1945, R. N. Mathur & B. R. Pant leg.; 2♂♂ 2♀♀, Dehra Dun, U. P., III-1937, 10-I-1940, J. C. M. Gardner leg.

Distribution. Tibet, N. China, Himalayas, India, Afghanistan.

4. *Chrysolina aurata aurata* (Suffrian, 1851)

Specimens examined. 2 exs., New Forest, Dehra Dun, U. P., 29-II-1929, 9-VI-1933, J. C. M. Gardner leg.; 10 exs., Dehra Dun, U. P., 18-III-1936, III-1937, J. C. M. Gardner leg.; 2 exs., Tons Nadi, Dehra Dun, U. P., 5-III-1929, J. C. M. Gardner leg.; 1 ex., Terah pln., Punjab, 7-IV-1938.

Distribution. India.

5. *Chrysolina coeruleans* (Scriba, 1791)

Specimens examined. 3♀♀, Pahalgam (7500 ft.), Kashmir, 4-10-VII-1944, B. M. Bhatia leg.; 1♂, Nowsphera, N. W. F. P., 28-IV-1938.

Distribution. NW. Himalayas, Kashmir, W. China.

6. *Chrysolina exanthematica* (Wiedemann, 1821)

Specimens examined. 2♂♂, Dehra Dun, U. P., 16-I, 7-IX-1929, B. M. Bhatia & G. D. Pant leg.

Distribution. Siberia, Japan, China, India.

Compared with specimens at hand from Japan and Manchuria the specimens from India show rather remarkable differences in the shapes of the aedeagus and pronotum (Fig. 1). The aedeagus is apically asymmetrical and rounded in the specimens from India, while symmetrical and trapezoid in those from Japan and Manchuria. The pronotum is convergent anteriorly, with the lateral area weakly convex, in the former, while dilated anteriorly and strongly convex laterally in the latter. These forms may be distinct, but the material at hand is insufficient for arriving at a definite conclusion.

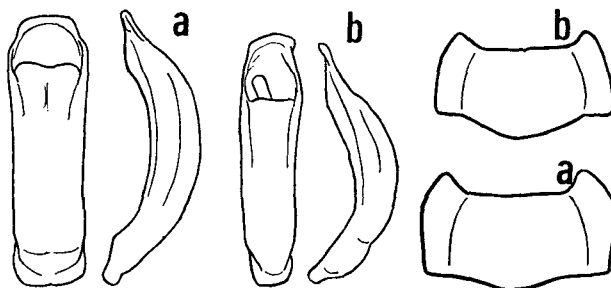


Fig. 1. Aedeagus (left, dorsal view; right, lateral view) and pronotum of *Chrysolina exanthematica* from: a, Mt. Taisetsu-san, Hokkaidô, Japan; b, Dehra Dun, U.P., India.

7. *Chrysolina inconstans* (Wiedemann, 1823)

Specimens examined. 5♂♂ 5♀♀, Dehra Dun, U. P., 17-18-X-1928, G. D. Pant leg., 20-V, 20-VIII-1933, IV-1936, 28-II-1937, J. C. M. Gardner leg., 5-III-1936, IX-1938, B. Singh leg.; 1♂, Dohran, Dehra Dun, U. P., 5-VII-1936, B. Pershad leg.; 5♂♂ 5♀♀, New Forest, Dehra Dun, U. P., 8-XI, 20-XII-1927, 6-VIII-1932, R. N. Mathur leg., 10-II-1928, N. C. Chatterjee leg., 10-V-1931, B. Pershad leg., 7-V-1933, B. M. Bhatia leg.; 1♀, Suswa block 18, 1-III-1941, J. A. Graham leg.; 3♀♀, Terah pltn., Punjab, 24-IV-1938, R. N. Mathur leg.

Distribution. India, Nepal, Ceylon.

8. *Chrysolina madrasae* (Jacoby, 1900)

Specimens examined. 3♂♂, Tithimatti, S. Coorg., 8-10-VIII-1940, B. M. Bhatia leg.; 1♂, Kangra Valley, Punjab, 13-II-1931, G. D. Bhassin leg.

Distribution. India.

9. *Chrysolina vishnu* (Hope, 1831)

Specimens examined. 1♂, Punjab, X-1933, R. N. Parker leg.; 1♂ 1♀, Dehra Dun, U. P., 20, 29-III-1933, J. C. M. Gardner leg.

Distribution. India, Nepal, Sikkim.

The hind wings of this species show a series of degeneration as illustrated in Fig. 2, where are given the hind wings of 4 specimens from different localities of the Indian Subcontinent. Such considerable variations in the degree of degeneration are also reported for *Chrysolina banksi* (Fabricius) by P. Jolivet.

10. *Chrysolina brahma* n. sp.

Male. Body oblong oval, slightly dilated posteriorly, widest near apical 1/3, thence roundly narrowed to apex; finely granulate on dorsum, dark reddish brown

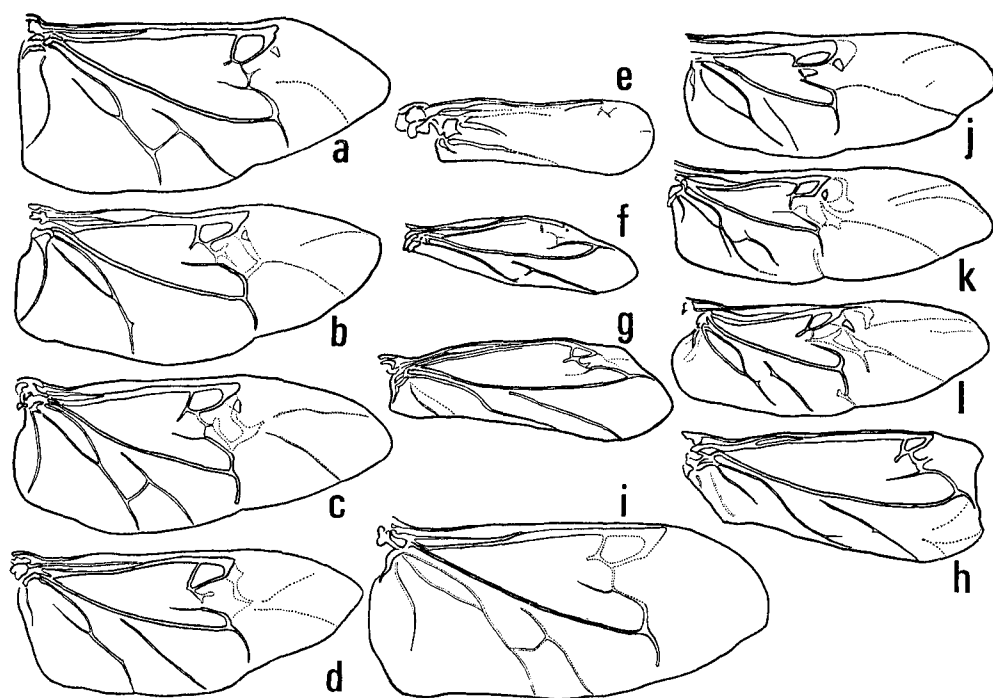


Fig. 2. Hind wing of: a, *Crosita mellyi*; b, *Chrysolina inconstans*; c, *C. aurata aurata*; d, *C. coeruleans*; e, *C. brahma*; f, *C. vishnu* (from Kathmandu, Nepal); g, ditto (from Punjab, India); h, ditto (from Simla); i, ditto (from Dehra Dun); j, *Plagiodera rufescens*; k, *Phratora abdominalis* (from Simla); l, *Linacidea chlorina*.

with dull reflections, slightly infusate on head and pronotum; epipleuron, coxae, antenna on basal 4 segments and mouth-parts slightly light brownish.

Head slightly convex, impunctate; fronto-clypeus well demarcated from vertex, weakly and transversely depressed between eyes; last segment of maxillary palpus longer and slightly broader than the penultimate; antenna less than half the body length, situated nearer to clypeus than to eye; 1st segment clavate; 6th to 11th each weakly but gradually widened to apex; relative length of segments: 11th > 1st \approx 3rd > 9th > 4th \approx 7th \approx 8th \approx 10th > 2nd \approx 5th \approx 6th; 10th $\frac{3}{4}$ as broad as long; 11th 2 times as long as 5th, obtusely pointed at apex. Pronotum transverse, almost 2 times as broad as long at mesal line, sparsely covered with very fine punctures; disc weakly convex; lateral area weakly convex and limited inwardly by a group of deep large punctures and by obscure broad longitudinal depression basally; sides nearly parallel on basal half, thence roundly and strongly convergent anteriorly; broadly and deeply arcuate-emarginate at anterior margin, sinuately produced at posterior margin; anterior angle bluntly produced, the posterior nearly rectangular. Scutellum roundly trigonate, almost as long as broad, scattered with several fine punctures. Elytron nearly 3 times as long as broad; disc rather densely covered with distinct punctures, almost confusedly punctate on apical half owing to dense punctuation on interstices; 4 paired rows, sutural and short scutellar rows of punctures discernible at least on basal half; epipleuron weakly convex, smooth and impunctate; prosternal process distinctly channeled on both sides, with median

part raised and shining; tarsi with basal 3 segments wholly ciliate beneath; 1st segment weakly dilated; aedeagus broad with a slender process apically.

Female. Tarsi with a naked longitudinal area on underside of 1st segment.

The punctuation on the pronotum and elytra shows some variations. In one female specimen, the punctuation is very fine and sparse, with the primary punctate striae somewhat depressed and the interstices very finely punctate, and weakly and irregularly strigose. On account of irregularly paired punctate striae of the elytron, the location of the antennal insertion and the narrower maxillary palpus etc., this species belongs to the subgenus *Chalcoidea* Motschulsky. As the elytra are rather irregularly punctate-striate with the interstices closely punctate, this species is close to *C. carnifex* (Fabricius) and *interstincta* (Suffrian) both from Europe, but is readily distinguished by the coloration and the shape of male aedeagus, etc. *Chrysolina vishnu* (Hope) from India also belongs to the same subgenus, but it has the elytron distinctly margined with red-brown and distinctly punctate-striate.

Size. 7.2 mm in length and 4.0 mm in breadth (male), 8-9 mm in length and 4-4.8 mm in breadth (female).

Specimens examined. 1 ♂ (holotype) 5 ♀♀, Chini (9500 ft.), Bashahr State, India, V-VI-1928. Deposited in the collection of FRI, Dehra Dun, except for 2 females which are preserved each in the collection of the Entomological Institute, Hokkaidō University (Sapporo) and in my collection.

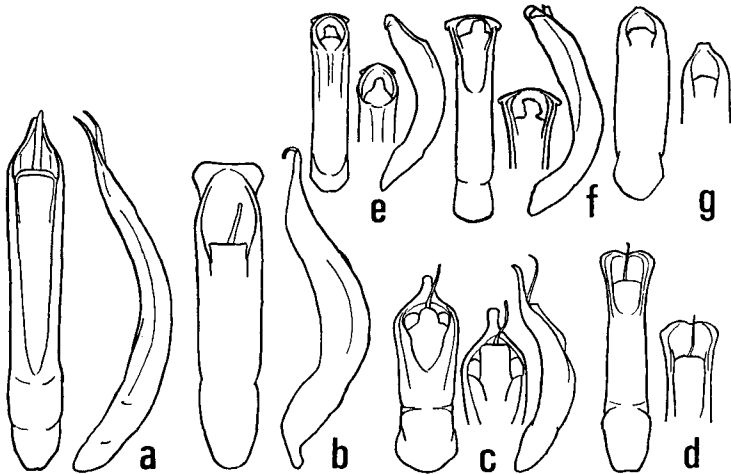


Fig. 3. Aedeagus (left, dorsal view; middle, apical portion; right, lateral view) of; a, *Chrysolina vishnu* (from Dehra Dun); b, *C. krishna* (from Simla); c, *C. brahma* (holotype); d, *C. inconstans* (from Dehra Dun); e, *C. madrasae* (from Anaimalai Hills); f, *C. aurata aurata* (from Dehra Dun); g, *C. coerulans* (from Nowsphera).

11. *Agasta formosa* Hope, 1840

Specimens examined. 2 ♂♂ 1 ♀, Lawacherra Res., Sylhet, Assam, 2-VI-1938, N. C. Chatterjee leg.; 18 ♂♂ 21 ♀♀, Samsing, Kalimpong, Bengal, 21, 23, 26-I-1934, N. C. Chatterjee leg. (on *Caecaria* sp.); 2 ♀♀, Lataguri, Jappaiguri, 9-III-1934, N. C. Chatterjee leg.; 1 ♀, Lopchu (5000 ft.), Darjeeling, Bengal, 24-IX-1929, J. C. M. Gardner leg.

Distribution. Himalayas, N. & S. India, Burma, Thailand, Vietnam, Laos, Java, S. China.

12. *Chrysomela populi* Linne, 1758

Specimens examined. 2♂♂, Mundal (6500, 8500 ft.), Chakrata, U. P., 10, 12-VI-1932, B. M. Bhatia leg.; 1♀, Keshdhar (8500 ft.), L. Kulu, Punjab, 2-VI-1932, C. F. C. Beeson leg.; 1♀, Kalsi, Chakrata, U. P., 8-V-1933, J. C. M. Gardner leg., 1♂, Dehra Dun, 25-VII-1930, A. H. Khan leg.; 1♂, New Forest, Dehra Dun, VII; 1♂, no data.

Distribution: Europe, W. Asia, Siberia, China, Korea, Japan, India.

13. *Linnaeidea chlorina* (Maulik, 1926)

Specimens examined. 7 exs., Darjeeling, Bengal, 21, 22-VIII-1933, C. K. Homfray leg. (defoliating *Alnus nepalensis*); 5 exs., Tharali, Garhwal, U. P., 4-VI-1937, J. C. M. Gardner leg.; 1 ex, Gwaldam, Garhwal, U. P., 10-VI-1937, J. C. M. Gardner leg.

Distribution. Himalayas.

14. *Plagiodera miniaticollis* (Hope, 1831)

Specimens examined. 10 exs., Dehra Dun, U. P., 3-IV-1934, N. C. Chatterjee leg. (defoliating *Xylosma longifolium*); 2 exs., Guler (1554 ft.), Kangra Dist., Punjab, 26-VI-1934, B. M. Bhatia leg.

Distribution. India, Burma.

15. *Plagiodera rufescens* (Gyllenhal, 1808)

Specimens examined. 2♀♀, Paonta Range, Nahan, H. P., 3,4-VII-1949, G. D. Basin leg.

Distribution. India, Ceylon.

16. *Plagiodera* sp.

Specimens examined. 1♀, Anaimalai Hills (2400 ft.), Madras, 10-V-1930, J. C. M. Gardner leg.

17. *Phaedon assamensis* Jacoby, 1900

Specimens examined. 2♀♀, Jorhal, Assam, 16-I-1937, K. C. Sharma leg.

Distribution. India, Assam.

18. *Pseudolina indica* Jacoby, 1896

Specimens examined. 1♂2♀♀, Mundal, Chakrata, U. P., 24-VI-1933, S. Bahadur leg.; 2♂♂, Chakrata, U. P., 7, 9-VII-1937, B. M. Bhatia leg.; 2♂♂2♀♀, Kharamba (9500 ft.), Chakrata, U. P., 23-X-1931, C. F. C. Beeson leg.; 5♂♂5♀♀, Bodyar (8000 ft.), Chakrata, U. P., 29-VI-1924, B. M. Bhatia & C. F. C. Beeson leg.; 1♀, Deoban (9700 ft.), Chakrata, U. P., 21-VI-1933, B. M. Bhatia leg.; 1♀, Konain, Chakrata, U. P., 23-VI-1924, B. M. Bhatia leg.; 2♂♂4♀♀, Talratach (10000 ft.), Simla, 27-V-1924, C. F. C. Beeson leg.; 4♂♂4♀♀, Dehra Dun, U. P., 14-16-VI, 12, 16-VII, 25-VIII-1926.

Distribution. India (United Provinces).

P. rama described from Dehra Dun appears very close to the present species. The single specimen on which it was originally based is stated to be 5 mm in body length and shining dark brown with a bluish tinge. The present material is

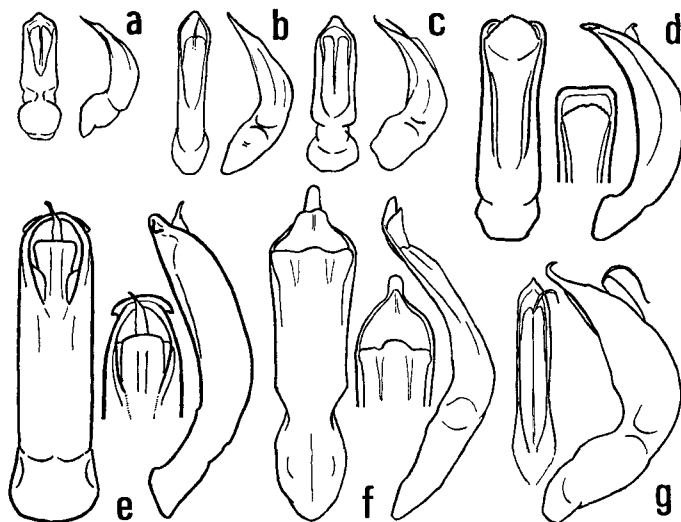


Fig. 4. Aedeagus (left, dorsal view; middle, apical position; right, lateral view) of: a, *Plagioderes miniaticollis*; b, *P. rufescens*; c, *Linaeidea chlorina*; d, *Crosita mellyi*; e, *Humba cyanicollis*; f, *Pseudolina indica*; g, *Agasta formosa*.

variable in size and coloration: the body length ranges from 6 to 7.8 mm in the males and from 7 to 10 mm in the females; the coloration varies from greenish blue, violaceous blue, or dark blue, with metallic reflections, to dark brown with a metallic green or blue tinge. It is possible that *P. rama* is not a distinct species, but represents the smallest example of *P. indica*.